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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/482,135

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REGNIER

K

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EXAMINER

CARROLL, M

ART UNIT

PAPER NUMBER

2839

DATE MAILED:

09/20/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.

09/482,135

Applicant(s)

REGNIER, KENT E

Examiner

Michael E. Carroll

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 28-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 22-26 is/are rejected.
- 7) ☒ Claim(s) 21 and 27 is/are objected to.
- 8) ☒ Claims 28-30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-27, drawn to an electrical connector having a supportive barrier, classified in class 439, subclass 587.
- II. Claims 28-30, drawn to a process to manufacture an electrical connector, classified in class 29, subclass 883.

Inventions of Group I and Group II are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can be made by another and materially different process, for example, by hand.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

2. During a telephone conversation with Robert Zeitler (Reg. No. 37,973) on September 13, 2000 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-27. Affirmation of this election must be made by applicant in replying to this Office action. Claims 28-30 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

3. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. The Application recites Figs. 1-8, however, the two sheets of drawings submitted only illustrate Figs. 1-4. Applicant is required to furnish drawings for Figs. 5-8 under 37 CFR 1.81. No new matter may be introduced in the required drawings.

Specification

4. The disclosure is objected to because of the following informalities:

(a) page 2, line 4 "that same" should be --that the same--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 recites the limitation "said barrier member" in line 3. There is insufficient antecedent basis for this limitation in the claim. (The Examiner will assume the Applicant meant the "retention member" since the "retention member" additionally performs a barrier function.)

6. Claims 10 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are the general assembly of the structure before a "post-assembly bending" for terminal retention.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, 11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama. Scowen teaches a electrical connector including a "dielectric housing (Fig. 3, element 14) with a plurality of receptacles (Fig. 3, element 34) arranged in an array, with each receptacle having a through axis," a "plurality of electrically conductive contacts" (Fig. 3, element 36) which are "positioned within some of the receptacles," a "plurality of retention members (Fig. 3, element 38, 40) within the receptacle imparting an ungapped condition to the connector," the "ungapped condition of the connector substantially prevents passage of liquid." (See Title, "Seal Retainer for Electrical Connectors."), the limitation of dependent Claim 14, namely, a "retention member with an external surface which engages said receptacle" (See Fig 3, element 38 engaging element 34.); the limitation of dependent Claim 15, namely, a "receptacle stop surface" which abuts the "retention member external surface" (See Col. 5, lines 46-47.); the limitation of dependent Claim 16, the "receptacle has an interior surface (Fig. 3, element 34.) which is generally parallel to said through axis, and said retention member external surface (Fig. 3, element 38.) abuts said receptacle interior surface;" and the limitations of dependent Claims 19 and 20, a resilient retention member compressed within the receptacle. (See Col. 3, lines 42-44.)

Scowen does not teach the following: (1) in independent Claim 1, the "retention member engaging at least one of the said contacts;" (2) dependent Claim 2 and 13, that the "retention member has an opening therethrough, said electrically conductive contact is positioned through said retention member opening and substantially fills said opening" and "retention member has

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an opening therethrough, and a portion of said contact is within and in engagement with said retention member opening;" (3) dependent Claim 3, the "receptacle of the housing has a stop surface within the receptacle, and wherein said barrier member is between said stop surface and a portion of said electrically conductive contact;" (4) dependent Claim 4, a "demarcation between said first and second portions being at least partially within said housing, and said retention member is in contact with the respective first and second portions within the housing;" (5) dependent Claim 6, the ungapped condition imparts compliant and stable mount characteristics to said contacts;" (6) dependent Claim 11, the "housing is a unitary member;" and (7) dependent Claims 17 and 18, a "force fit condition is present between said contact portion and said retention member opening and between said receptacle and said retention member external surface" and where the force fit is "between said receptacle interior surface and said retention member external surface."

However, Kameyama teaches the limitation of independent Claim 1, namely, a "retention member" (Figs. 4b.) that engages the "contact" and dependent Claim 2 that "contact" substantially fills the opening therethrough. Additionally, Kameyama teaches dependent Claim 13, namely, "a portion of said contact is within and in engagement with said retention member opening." (Figs. 4b.) One of ordinary skill in the art, at the time the invention was made, would have been motivated to have the "retention member" engage the "contact" and substantially fill the opening in the "retention member." Effective sealing dictates the placement of the "retention member," one skilled in the art would be motivated to locate the "retention member" at a point with a substantially uniform cross-sectional area (i.e. circular or rectangular) of the "contact," or the contact lead wire to promote effective sealing characteristics. It would have been obvious to

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one skilled in the art that the "retention member" may be located on any substantially uniform cross-sectional shape to permit effective sealing.

Kameyama also teaches, the limitation of dependent Claim 3, a "stop surface" (See Col. 3, lines 43-47.) within the receptacle with the "retention member" between the stop surface (See Fig. 1) and a portion of the contact. (See Fig. 4(b).) One of ordinary skill in the art, at the time the invention was made, would be motivated to provide a "stop surface" to ensure uniformity in assembly and to have the "retention member" located to between the stop surface and a portion of the "contact" in order to provide an effective seal. (One skilled in the art would have a uniform cross-sectional area through the "retention member," for an effective seal, as such both ends of the "contact" would protrude from the retention member.) It would have been obvious to one of ordinary skill in the art to provide a "stop surface" for uniform assembly and locate the "retention member" between the "stop surface" and a portion of the "contact" to ensure an effective seal.

Kameyama still further teaches, dependent Claim 4, a "contact" with a "first and second portions" and a "demarcation between the first and second portions of the contact" being at the "retention member" (See Fig. 4(b).) which contacts both first and second members with both being partially within the housing. (See Figs. 1 and 5.) One of ordinary skill in the art, at the time the invention was made, would be motivated to locate the "retention member" between the first and second members located partially in a housing because the "retention member" is a barrier between two different environments. (i.e. wet and dry.) It would be obvious to one of ordinary skill to locate the "retention member" so as to provide a barrier between two different environments.

Kameyama still further teaches, dependent Claim 6, an "ungapped condition that imparts compliant and stable mount characteristics to said contact." (See Col. 2, lines 15-22.) One of ordinary skill in the art, at the time the invention was made, would be motivated to employ an "ungapped condition" of a retention member not only to seal, but to provide a "positioning stabilizer" to the contact. It would have been obvious to one of ordinary skill at the time the invention was made to employ an "ungapped condition" to provide stability the contact.

Kameyama still further teaches, dependent Claim 11, a housing that is a "unitary member." (See Col. 1, lines 21-24.) One of ordinary skill in the art, at the time the invention was made, would be motivated to use a housing that was a "unitary member" for simplicity in design, manufacture and assembly. It would have been obvious to one of ordinary skill in the art to employ a unitary housing member.

Finally, Kameyama teaches dependent Claim 17, namely, a force fit condition is present between the contact portion and the retention member opening (See Fig. 4(b).) and between the receptacle and said retention member external surface. (See Fig. 1 and Col. 4, lines 46-54.) Moreover, Kameyama teaches dependent Claim 18, namely, a force fit between receptacle inner surface and retention member external surface. (See Fig. 1.) One of ordinary skill in the art, at the time the invention was made, would have been motivated to have a force fit condition between both the contact and retention member and the retention member and the receptacle in order to provide a seal. Moreover, one of skill in the art would be motivated to have the external surface of the retention member intimately contact the receptacle interior surface to create a seal since the retention member is located inside the receptacle. It would have been obvious to one of

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ordinary skill to use a force fit condition to provide a seal between surfaces the external surface of a retention member and the receptacle inner surface.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama as applied to claim 4 above, and further in view of Hashiguchi. Scowen in view of Kameyama teaches all of the limitations of dependent Claim 4, except for the "first portion of the electrically conductive contact generally lies along said through axis, while said second portion of the contact is at an acute angle relative to said through axis." However, Hashiguchi teaches a first portion which generally lies along the through axis and a second portion at an acute angle to the through axis. (See Fig. 1, element 90.) One of ordinary skill in the art, at the time the invention was made, would be motivated to use different terminal configurations to secure an electrical connection. It would have been obvious to one skilled in the art to use a terminal with a first portion which generally lies along the through axis and a second portion at an acute angle to the through axis.

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama as applied to claim 1 above, and further in view of Laub. Scowen in view of Kameyama teaches all of the limitations of dependent Claims 7 and 8, except for an array of contacts in 1mm and 0.05 inch grids. However, Laub teaches that 1mm and 0.05 inch grids are industry standards for Land Grid Arrays (LGA). (See Col. 3, lines 51-54.) One of ordinary skill in the art, at the time the invention was made, would have been motivated to employ an "array of contacts" spaced according to the industry standards. It would have been obvious to one skilled in the art to choose spacing according to industry standards.

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10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama as applied to claim 1 above, and further in view of Tran et al. Scowen in view of Kameyama teaches all of the limitations of dependent Claim 9, except for a "terminal portion which is formed to be offset with respect to said receptacle through axis. However, Tran et al. teaches a "terminal portion" (Fig. 4, element 28) which is formed to be offset with the receptacle through axis. One of ordinary skill in the art, at the time the invention was made, would have been motivated to employ various different terminal configurations to secure an electrical connection including a "terminal portion offset with respect to the through axis of the receptacle." It would have been obvious to one of ordinary skill in the art to use a "terminal portion which is formed to be offset with respect to the receptacle through axis."

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama as applied to claim 1 above, and further in view of Laub. Scowen in view of Kameyama teaches all of the limitations of dependent Claim 12, except for a housing which "includes a plurality of housing component strips." However, Laub teaches the use of a plurality of housing strips to form a contact array. (See Col. 2, line 32-40.) One of ordinary skill in the art, at the time the invention was made, would have been motivated to employ a "plurality of housing component strips" to form a contact array of any predetermined size. It would have been obvious to one of ordinary skill, to employ a "plurality of housing component strips" to form a contact array.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama for the reasons stated for Claims 2, 4 and 6.

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13. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama for the reasons stated for Claims 22 and 3.

14. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama for the reasons stated for Claims 22, 15 and 16.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scowen in view of Kameyama for the reasons stated for Claims 22 and 20.

Allowable Subject Matter

16. Claims 21 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kozel et al., Bishop and McDevitt Jr. teach terminals which are bent. Tabata et al. and Noguchi teach the use of different configurations of resilient sealing elements.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Stephan whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday (7:30-5:00), alternate Fridays off.

Any inquiry of general nature related to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956. The group fax number is (703) 308-7722 or (703) 308-7724.



Steve Stephan
Supervisor Primary Examiner
Art Unit 2839

mec
September 18, 2000